

Application No. 09/581,235
Supplemental Amendment

Amendments to the Claims

The following listing of the claims replaces all previous amendments and listings of the claims.

1.-22. (Canceled)

23. (Currently Amended) A desalination apparatus operated on a batch operation mode comprising:

an evaporation can;

a heat exchanger placed in raw water in said evaporation can so as to subject low-temperature waste heat supplied to said heat exchanger and raw water in the evaporation can to heat exchange and generate water vapor in the evaporation can, said low-temperature waste heat being an exhaust steam from a steam turbine for electric power generation in a plant;

a condenser connected to said evaporation can to receive the water vapor from said evaporation can, cool the water vapor by subjecting the water vapor and cooling water to heat exchange and obtain distilled water;

a distilled water tank connected to said condenser for receiving and storing said distilled water;

vacuum means associated with said evaporation can for evacuating said evaporation can and depressurizing an inside thereof to promote generation of water vapor in said evaporation can;

raw water supply means provided at said evaporation can for externally supplying raw water into said evaporation can, said raw water supply means comprising a control valve connected to said evaporation can for supplying raw water into said evaporation can;

raw water discharge means for opening said evaporation can to the atmosphere for discharging concentrated raw water from said evaporation can, said raw water discharge

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means comprising a second control valve for opening said evaporation can to the atmosphere;
and

control means for controlling said vacuum means intermittently so that said vacuum means is operated for a predetermined period after concentrated raw water is discharged from said evaporation can, the raw water is supplied into said evaporation can and said evaporation can is closed upon starting of a desalination operation, said control means further configured to control said control valves.

24. and 25. (Canceled)

26. (Previously Presented) A desalination apparatus according to claim 23, wherein said desalination apparatus is incorporated in series or parallel to a condenser of said steam turbine for electric power generation.

27. (Previously Presented) A desalination apparatus according to claim 23, wherein said desalination apparatus is used for electric power generation.

28. (Previously Presented) A desalination apparatus operated on a batch operation mode comprising:

a plurality of evaporation cans;

a heat exchanger placed in raw water in said evaporation can so as to subject low-temperature waste heat supplied to said heat exchanger and raw water in the evaporation can to heat exchange and generate water vapor in the evaporation can, said low-temperature waste heat being an exhaust steam from a steam turbine for electric power generation in a plant;

a condenser connected to said evaporation can to receive the water vapor from said evaporation can, cool the water vapor by subjecting the water vapor and cooling water to heat exchange and obtain distilled water;

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a distilled water tank connected to said condenser for receiving and storing said distilled water;

vacuum means associated with said evaporation can for evacuating said evaporation can and depressurizing an inside thereof to promote generation of water vapor in said evaporation can;

raw water supply means provided at said evaporation can for externally supplying raw water into said evaporation can, said raw water supply means comprising a control valve connected to said evaporation can for supplying raw water into said evaporation can;

raw water discharge means for opening said evaporation can to the atmosphere for discharging concentrated raw water from said evaporation can, said raw water discharge means comprising a second control valve for opening said evaporation can to the atmosphere; and

control means for controlling said vacuum means intermittently so that said vacuum means is operated for a predetermined period after concentrated raw water is discharged from said evaporation can, the raw water is supplied into said evaporation can and said evaporation can is closed upon starting of a desalination operation,

wherein said heat exchanger is connected to a first evaporation can, said condenser is connected to a final evaporation can, and a further condenser is connected to an upstream side evaporation can and placed in raw water in a down-stream side evaporation can in a each pair of adjacent evaporation cans, so that said further condenser receives water vapor from said upstream side evaporation can, cools the water vapor with raw water in said downstream-side evaporation can and thereby produce distilled water, and also heats the raw water in said downstream side evaporation can and generates raw water.

29. (Canceled)

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30. (Previously Presented) A desalination apparatus according to claim 23, wherein said control means is so arranged that it controls said vacuum means and said control valves so that said concentrated raw water is discharged from said evaporation can, the raw water is supplied into said evaporation can, and an evacuation of said evaporation can is performed for a predetermined period upon the starting of the desalination operation.

31. (Previously Presented) A desalination apparatus operated on a batch operation mode comprising:

a plurality of evaporation cans disposed in parallel rows each including at least one evaporation can;

a heat exchanger placed in raw water in said evaporation can so as to subject low-temperature waste heat supplied to said heat exchanger and raw water in the evaporation can to heat exchange and generate water vapor in the evaporation can, said low-temperature waste heat being an exhaust steam from a steam turbine for electric power generation in a plant;

a condenser connected to said evaporation can to receive the water vapor from said evaporation can, cool the water vapor by subjecting the water vapor and cooling water to heat exchange and obtain distilled water;

a distilled water tank connected to said condenser for receiving and storing said distilled water;

vacuum means associated with said evaporation can for evacuating said evaporation can and depressurizing an inside thereof to promote generation of water vapor in said evaporation can;

raw water supply means provided at said evaporation can for externally supplying raw water into said evaporation can, said raw water supply means comprising a control valve connected to said evaporation can for supplying raw water into said evaporation can;

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raw water discharge means for opening said evaporation can to the atmosphere for discharging concentrated raw water from said evaporation can, said raw water discharge means comprising a second control valve for opening said evaporation can to the atmosphere; and

control means for controlling said vacuum means intermittently so that said vacuum means is operated for a predetermined period after concentrated raw water is discharged from said evaporation can, the raw water is supplied into said evaporation can and said evaporation can is closed upon starting of a desalination operation,

wherein said control means is so arranged that it controls said vacuum means and said control valves in such a way that said evaporation cans in all said rows do not simultaneously open to the atmosphere.

32. (Previously Presented) A desalination apparatus according to claim 23, wherein said raw water supply means is formed by said vacuum means and said first control valve connected to a lower part of said evaporation can that is opened or closed by said control means.

33. (Canceled)

34. (Previously Presented) A desalination apparatus according to claim 23, wherein said concentrated raw water discharge means is connected to a lower part of said evaporation can that is opened or closed by said control means.

35. (Previously Presented) A desalination apparatus according to claim 23 or 37, wherein said evaporation can, heat exchanger, condenser, distilled water tank, vacuum means and raw water supply means are assembled in a single frame as a unit.

36. (Previously Presented) A desalination apparatus according to claim 23, wherein said evaporation can, heat exchanger, condenser, distilled water tank, vacuum means, raw

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water supply means and concentrated raw water discharge means are assembled in a single frame as a unit.

37. (Previously Presented) A desalination apparatus according to claim 23, wherein one of (i) said cooling water is contained in a raw water tank and said condenser is placed in the raw water in said raw water tank and (ii) said cooling water is passed through said condenser, to effect said heat exchange with said water vapor.